REMARKS/ARGUMENTS

In the Final Office Action of October 6, 2009, claims 1-11, 13-16 and 18 were rejected under 35 U.S.C. 103. Additionally, claims 17, 19, and 20 were rejected under 35 U.S.C. 112, first paragraph and under 35 U.S.C. 112, second paragraph. However, claims 17, 19, and 20 were noted as being allowable if rewritten to overcome the rejections under 35 U.S.C. 112 and to include all of the limitations of the base claim and any intervening claims.

On January 19, 2010, a telephone interview between the undersigned attorney and Examiner Dennis Joseph was conducted. In the telephone interview, the status of the application, the claims regarding the indefiniteness of the allowable matter, and issues of power of attorney were discussed. On February 2, 2010, a more extensive telephone interview was conducted between the undersigned attorney and Examiner Dennis Joseph. In the telephone interview, possible claim amendments with respect to dependent claims 17, 19 and 20 were discussed to place the claims in condition for allowance.

In response, Applicants have amended claims 1-3 and 13-20 and filed herewith a Request for Continued Examination (RCE). Support for the amendments to claims 1, 3 and 13-20 is found in Applicants' specification at, for example, Fig. 4 and page 4, line 22-page 5, line 15. Support for the amendment to claim 2 is found in Applicants' specification at, for example, Fig. 6, page 1, lines 25-28 and page 6, lines 6-15. Applicants hereby request reconsideration of the application in view of the claim amendments, the RCE and the below-provided remarks.

Claim Rejections under 35 U.S.C. 112

Claims 17, 19, and 20 were rejected under 35 U.S.C. 112, first paragraph, as allegedly failing to comply with the written description requirement. Additionally, claims 17, 19, and 20 were rejected under 35 U.S.C. 112, second paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter which Applicants regard as the invention.

Applicants note herein that claims 17, 19 and 20 have been amended. As a result, Applicants respectfully submit that the rejections to claims 17, 19 and 20 under 35 U.S.C. 112, first paragraph and under 35 U.S.C. 112, second paragraph are moot.

Claim Rejections under 35 U.S.C. 103

Claims 1-3, 5 and 7 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen et al. (U.S. Pat. Pub. No. 2001/0005186 A1, hereinafter "Van Dalfsen") in view of Kwak et al. (U.S. Pat. No. 6,166,781, hereinafter "Kwak") further in view of Zlotnick (U.S. Pat. No. 6,522,784 B1). Claims 4 and 6 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Okada et al. (U.S. Pat. No. 5,854,799, hereinafter "Okada"). Claims 8-11 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Lengyel (U.S. Pat. No. 6,614,428 B1). Claims 13-16 and 18 were rejected under 35 U.S.C. 103(a) as allegedly being unpatentable over Van Dalfsen, Kwak and Zlotnick and further in view of Adachi et al. (U.S. Pat. Pub. No. 2004/0081266 A1, hereinafter "Adachi"). However, Applicants respectfully submit that the pending claims are patentable over the cited art for the reasons provided below.

Independent Claim 1

Claim 1 has been amended to include the subject matter recited in the previous dependent claim 17 in view of the telephone interview of February 2, 2010. As amended, claim 1 recites in part that "*multiple quantization errors of different neighboring pixels of a current pixel are used to generate a pixel value to be displayed on the display panel, wherein the pixel value to be displayed and the multiple quantization errors of the different neighboring pixels satisfy:*

$$PVTBD = rounded\,(X_{(x,y)} + CV + a \times QE(X_{(x-1,y-1)}) + b \times QE(X_{(x,y-1)}) + c \times QE(X_{(x+1,y-1)}) + d \times QE(X_{(x-1,y)}))$$

where PVTBD represents the pixel value to be displayed, rounded() represents a rounding function, CV represents a constant value to perform the rounding function, X(x,y) represents the current pixel that is located in column x and line y of an image,

QE(X(x-1,y-1)) represents quantization error of a neighboring pixel that is located in column x-1 and line y-1 of the image, QE(X(x,y-1)) represents quantization error of a neighboring pixel that is located in column x and line y-1 of the image, QE(X(x+1,y-1)) represents quantization error of a neighboring pixel that is located in column x+1 and line y-1 of the image, QE(X(x-1,y)) represents quantization error of a neighboring pixel that is located in column x-1 and line y of the image, and a, b, c and d represent multiplier coefficients for QE(X(x-1,y-1)), QE(X(x,y-1), QE(X(x+1,y-1)) and QE(X(x-1,y)), respectively."

Applicants respectfully assert that the combination of Van Dalfsen, Kwak and Zlotnick fails to teach the above-identified limitation of amended claim 1. As a result, Applicants respectfully assert that amended claim 1 is not obvious over Van Dalfsen, Kwak and Zlotnick.

Dependent Claims 13 and 16-18

Claims 13, 16, and 18 have been amended to accommodate the amendments of claim 1. Claim 17 has been amended to recite that "*the constant value is 1/2.*" Amended claims 13 and 16-18 depend from and incorporate all of the limitations of independent claim 1. Thus, Applicants respectfully assert that amended claims 13 and 16-18 are allowable at least based on an allowable claim 1.

Independent Claim 2

Claim 2 has been amended to recite in part that "*most significant bits are quantized in a first random-access memory and least significant bits are quantized in a second random-access memory, wherein the first random-access memory is physically separate from the second random-access memory*" (emphasis added). Applicants respectfully assert that Van Dalfsen, Kwak and Zlotnick fail to teach the above-identified limitation of amended claim 2. As a result, Applicants respectfully assert that amended claim 2 is not obvious over Van Dalfsen, Kwak and Zlotnick.

In the Final Office Action, Kwak is cited for teaching the limitation of "*most significant bits are quantized in a first random-access memory and least significant bits are quantized in a second random-access memory*" of claim 2, as filed on August 5,

2009. (See page 7 of the Final Office Action). However, Applicants respectfully assert that Kwak fails to teach the above-identified limitation of amended claim 2.

Kwak teaches that a non-linear characteristic correction apparatus includes a first look up table (LUT) (20), a second LUT (22), a multiplier (24), and an adder (26). (See Fig. 2 and the paragraph between column 4, line 66 and column 5, line 20 of Kwak). Kwak also teaches that the first LUT (20) stores first data and reads the stored first data using most significant bits of an N-bit digital input signal as an address. (See the paragraph between column 4, line 66 and column 5, line 20 of Kwak). Kwak further teaches that that the second LUT (22) stores second data and reads the stored second data using most significant bits of the N-bit digital input signal as an address. (See the paragraph between column 4, line 66 and column 5, line 20 of Kwak).

That is, Kwak merely teaches that the most significant bits of the N-bit digital input signal are used as an address by the first LUT (20) and the second LUT (22). However, Kwak fails to teach that most significant bits of the N-bit digital input signal are quantized in the first LUT (20) or the second LUT (22). Thus, Applicants respectfully assert that Kwak fails to teach that "*most significant bits are quantized in a first random-access memory*" (emphasis added), as recited in amended claim 2.

Additionally, Kwak teaches that the multiplier (24) multiplies data read from the second LUT (22) with least significant bits of the N-bit digital input signal and outputs the product to the adder 26. (See column 5, lines 21-30 of Kwak). In other words, Kwak teaches that the least significant bits of the N-bit digital input signal are multiplied by some data using the multiplier (24). However, Kwak teaches that the multiplier (24) is separate from both the first LUT (20) and the second LUT (22). (See Fig. 2 of Kwak). Because the multiplier (24) of Kwak is separate from both the first LUT (20) and the second LUT (22) of Kwak, Kwak fails to teach that least significant bits of the N-bit digital input signal are quantized in the first LUT (20) or the second LUT (22). Thus, Applicants respectfully assert that Kwak fails to teach that "*least significant bits are quantized in a second random-access memory*" (emphasis added), as recited in amended claim 2.

Furthermore, although Kwak teaches the first LUT (20) and the second LUT (22), Kwak is silent as to the physical relationship between the first LUT (20) and the second

LUT (22). Because Kwak is silent as to the physical relationship between the first LUT (20) and the second LUT (22), Kwak fails to teach that the first LUT (20) is physically separate from the second LUT (22). Thus, Applicants respectfully assert that Kwak fails to teach that "*the first random-access memory is physically separate from the second random-access memory*" (emphasis added), as recited in amended claim 2.

Thus, Applicants respectfully assert that Kwak fails to teach that "*most significant bits are quantized in a first random-access memory and least significant bits are quantized in a second random-access memory, wherein the first random-access memory is physically separate from the second random-access memory*" (emphasis added), as recited in amended claim 2. Because the combination of Van Dalfsen, Kwak and Zlotnick fails to teach all of the limitations of amended claim 2, Applicants respectfully assert that amended claim 2 is not obvious over Van Dalfsen, Kwak and Zlotnick.

Dependent Claims 14 and 19

Claim 14 has been amended to accommodate the amendment of claim 2. Claim 19 has been amended in a similar fashion to claim 1. Amended claims 14 and 19 depend from and incorporate all of the limitations of independent claim 2. Thus, Applicants respectfully assert that amended claims 14 and 19 are allowable at least based on an allowable claim 2.

Additionally, because of the similarities between amended claim 19 and amended claim 1, Applicants respectfully assert that the remarks provided above with regard to amended claim 1 apply also to amended claim 19. As a result, Applicants respectfully assert that amended claim 19 is not obvious over Van Dalfsen, Kwak and Zlotnick.

Independent Claim 3

Claim 3 has been amended in a similar fashion to claim 1. Because of the similarities between amended claim 3 and amended claim 1, Applicants respectfully assert that the remarks provided above with regard to amended claim 1 apply also to amended claim 3. As a result, Applicants respectfully assert that amended claim 3 is not obvious over Van Dalfsen, Kwak and Zlotnick.

Dependent Claims 4-11, 15 and 20

Claim 15 has been amended to accommodate the amendments of claim 3. Claim 20 has been amended to recite that "*the constant value is 1/2*." Claims 4-11, 15 and 20 depend from and incorporate all of the limitations of independent claim 3. Thus, Applicants respectfully assert that claims 4-11, 15 and 20 are allowable at least based on an allowable claim 3.

CONCLUSION

Applicants respectfully request reconsideration of the claims in view of the claim amendments and remarks made herein. A notice of allowance is earnestly solicited.

Respectfully submitted,

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